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Effect of activity based method on academic achievement of biology students

Sadhana
Assistant Professor, Dau Dayal Mahila (P.G.) College, Firozabad, Uttar Pradesh, India

Abstract
Present research work was carried out as an effort in this direction by employing Activity-Based Method to augment Biology Achievement. The Activity Based Method includes different type of activities for all round development of Science students at Secondary level. The school was selected through purposive sampling. 30 students were selected and these students were divided into two groups (15control and 15 experimental groups). Researcher was used two group pre-test post-test designs. Experimental Group was instructed by using Activity Based Method whereas Control Group was instructed by using traditional method. Researcher used self-made Biology Achievement test to measure the Biology Achievement of secondary level students. The result reveled that Biology Achievement significantly increased by using the Activity Based Method in contrast to traditional approach.

Keywords: teaching method, activity based method, biology, academic achievement

Introduction

Science & Technology plays a pivotal role in augmenting the growth and development of every nation. We often have no idea how science and technology really affect us. Modern societies are literally built on science and technology. Science and technology are making advances at an amazing rate. From telephones to the internet, calculators to computers, we are submerged in a sea of discoveries and invention made possible by science. Science & Technology not only have the potential to sustain the growth and development of any nation but also have the power to improve the quality of life of its citizens. Scientific & Technological development has enabled peoples to resolve their problems and raise their standard of living (Agarkar, 2017).

Thus we can say that Science has a very significant role in the development of any country. As it plays a vital role in the life of every human being it is important to provide Science knowledge to them for raising their standard of living, as well as to contribute in the development of their nation. Curriculum plays a vital role in facilitating the transfer of Science knowledge to the society through students. The main aim of teaching is to bring about socially desirable behavioral change in the student and this can only be achieved if the teaching is effective and based on the principles of teaching. In Activity Based classroom to make the hands-on experiences fruitful it is required to share ideas with peers and the teacher. It is believed that constructive method is more effective in comparison to the traditional methods of teaching as it enhances students‟ learning. Seeing the potential of Activity Based Method and the need of Science education current study has been selected. In present study an attempt has been made to improve quality of Science teaching by employing Activity Based Method in order to enhance students‟ Academic Achievement at secondary level students.

Objectives

1. To prepare lesson plans using Activity Based method for Biology teaching.
2. To prepare lesson plans by using traditional method for Biology teaching.
3. To compare the Achievement level of students after teaching by both the methods.

Method of the study: Researcher has used Experimental method.

Sample of The Study: The sample comprise of 30 science Students of 9th class from Thakur Sunahari Lal Memorial Inter College. There were 15 students in Experimental and 15 students in Control group

Tools of The Study: For both the methods 20 lesson plans each of 30 minutes were prepared from Biology text book of U.P. Board curriculum prescribed for class IX.

Statistical Techniques: Mean and Non parametric Mann-Whitney U-test were used as statistical techniques.

Findings of The Study

a. Findings related to academic achievement of biology students before implementation of activity based method. The calculated U value comes to be 2.07, which was higher than 2.04. Significant at 0.05 level of significance and insignificant at .01 level significance.
b. Comparison of Scores of the Academic achievement of Biology students in the pre-test and post-test of the control group. The Z value was higher than 2.75 which is significant at 0.05 level of significance and insignificant at 0.01 level of significance.
c. Comparison of Scores of the Academic achievement of Biology students in the pre-test and post-test of the experimental group. The Z value of pre-test and post-test scores was significant at 0.01 level of significance

d. Comparison of Scores of the academic achievement of biology students in the post-test of the control group and experimental group. The value of Z which was significant at both the level of significance
e. **$H0_1$:** There will be no effect of Activity Based method on Academic Achievement. U-value 192.5 have to be converted to Z score which was 3.31 which is higher than 2.75. Thus the hypothesis is rejected at 0.01 level of significance i.e. there is a significant difference found in post-test scores of students of Control group and Experimental group.

Conclusions of the study

The present study on Activity Based Approach enhances the Achievement in Sciences of class-9th students. Activity Based Methods consisted of different activities for the all-around development of children at the secondary level. Hence, it can be concluded that Activity Based Approach is significantly effective than the traditional approach of teaching.In Activity-Based teaching methods, learners are involved actively Hands-on experiences develop an opportunity to relate intangible concepts and theories with actual observations. It also helps learners to understand the scientific concepts.

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